Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method to predict potential athletic performance in a human comprising:

a) analyzing a sample obtained from the human for the presence of one or more genetic variations in α-actinin-3 (ACTN3) gene;

b) detecting the presence ~~determining whether the human has at least one copy~~ of [[a]] two 577R ~~allele~~ alleles at the ~~locus~~ loci encoding amino acid number 577 of the α-actinin-3 (ACTN3) protein; and

[[b]]c) predicting the potential sprinting, strength, or power performance of the human, the presence of two copies ~~at least one copy~~ of the 577R allele is ~~being~~ positively associated with sprinting, strength, or power performance.

2-4. (Canceled)

5. (Previously Presented) The method of claim 1, which comprises genotyping the human at the ACTN3 locus.

6-11. (Canceled)

12. (Previously Presented) The method of claim 1, further comprising measuring the amount of ACTN3 protein present in the human's skeletal muscle.

13. (Original) The method of claim 12, wherein the amount of ACTN3 protein is measured using an antibody specific for the ACTN3 protein.

14. (Previously Presented) The method of claim 1, further comprising measuring the amount of ACTN3 messenger RNA (mRNA) expressed in the human's skeletal muscle.

15. (Currently Amended) The method of claim [[4]] 1, further comprising identifying the ~~1747 C>T SNP~~ 577R alleles in the human's genomic DNA by DNA sequencing, allele-specific hybridization, allele-specific amplification or restriction fragment length polymorphism analysis.

16. (Currently Amended) The method of claim [[4]] 1, further comprising screening the human for the presence of one or more additional SNPs in the ACTN3 gene.

17. (Canceled)

18. (Previously Presented) The method of claim 1, further comprising screening the human for the presence of one or more genetic variations in at least one other gene.

19-23. (Canceled)

24. (Previously Presented) The method of claim 1, further comprising screening the human using a test selected from the group consisting of VO_2 maximum, anaerobic threshold test, Wingate test, critical power, resting metabolic rate, body composition, speed testing, power testing, strength testing, flexibility testing, muscle biopsy, fast twitch fiber test and slow twitch fiber test.

25. (Previously Presented) The method of claim 1, further comprising selecting the human's training program based on the presence of at least one copy of the 577R allele.

26-28. (Canceled)

29. (Previously Presented) The method of claim 1, further comprising selecting the human's sprint/power type sport or event on the basis of the presence of at least one copy of the 577R allele.

30-32. (Canceled)

33. (Previously Presented) The method of claim 1, wherein analyzing the sample further comprises analyzing DNA of the sample.

34. (Previously Presented) The method of claim 1, wherein the 577R allele is a SNP.

35-41. (Canceled)

42. (Previously Presented) The method of claim 1, wherein the presence of a 577RR genotype is positively associated with potential sprinting, strength or power performance in males.

43. (Previously Presented) The method of claim 1, wherein the presence of a 577RR genotype is positively associated with potential sprinting, strength or power performance in females.

44. (Cancelled)